



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

IV

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/891,309	06/27/2001	Peter D'Antonio	D'ANTONIO-15	1645
7590	10/06/2004		EXAMINER	
H. JAY SPIEGEL P.O. BOX 444 Mount Vernon, VA 22121			MCCLOUD, RENATA D	
			ART UNIT	PAPER NUMBER
			2837	

DATE MAILED: 10/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/891,309	D'ANTONIO ET AL.	
	Examiner	Art Unit	
	Renata McCloud	2837	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 31 August 2004.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-12, 14, 15 and 17-19 is/are pending in the application.
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-8, 14, 15, 18, and 19 is/are rejected.
- 7) Claim(s) 9-12 and 17 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 18 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claim is dependent upon a cancelled claim.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by H.F. Olson (US 2502016).

Claim 1: H.F. Olson teaches a sound diffuser (e.g. Fig. 7) with low frequency sound absorption (Col. 1:50-55) comprising a non-sound absorbing body having a front surface configured to diffuse sound waves (Fig. 7:15) and a rear surface (Fig. 7: rear of 15); and means (Fig. 7: 16) permitting sound waves to travel from the front surface to the rear surface through the body and sound absorbing means (Fig. 7: 17) on the rear surface for absorbing sound waves.

Claim 8: the permitting means comprises holes (Fig. 7: 16; Fig. 8:16).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims are 1-8, 14, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fries (US 5422446) in view of H.F. Olson (US 2502016).

Claim 1: Fries teaches a sound diffuser (e.g. Fig. 2) comprising a non-sound absorbing body having a front surface configured to diffuse sound waves (Fig. 2: 2) and a rear surface (Fig. 2:7); and means (Fig. 2: 8,9) permitting sound waves to travel from the front surface to the rear surface through the body and sound absorbing means (Fig. 2: 11) on the rear surface (Fig. 2: 7) for absorbing sound waves. Fries does not teach low frequency sound absorption.

H.F. Olson teaches a sound diffuser (e.g. Fig. 7) with low frequency sound absorption (Col. 1:50-55) comprising a non-sound absorbing body having a front surface configured to diffuse sound waves (Fig. 7:15) and a rear surface (Fig. 7: rear of 15); and means (Fig. 7: 16) permitting sound waves to travel from the front surface to

the rear surface through the body and sound absorbing means (Fig. 7: 17) on the rear surface for absorbing sound waves.

It would have been obvious to one having ordinary skill in the art at the time the invention was made use the apparatus taught by Fries for low frequency sound absorption as taught by H.F. Olson. The advantage of this would be an economic, low cost apparatus to absorb undesirable vibrations.

Claim 2: Fries and H.F. Olson teach the limitations of claim 1. Referring to claim 2, Fries teaches the front surface includes a plurality of parallel wells (Fig. 1: 9).

Claim 3: Fries and H.F. Olson teach the limitations of claim 1. Referring to claim 3, Fries teaches the front surface (Fig. 2: 2) includes a 2-D pattern of geometrical shapes including rectangular (Col. 3:42-48).

Claim 4: Fries and H.F. Olson teach the limitations of claim 3. Referring to claim 4, Fries teaches the shapes (Fig. 2:2) are separated by holes or slots (Fig. 2: 5).

Claim 5: Fries and H.F. Olson teach the limitations of claim 4. Referring to claim 5, Fries teaches the permitting means (Fig. 2: 8,9) comprises holes or slots.

Claim 6: Fries and H.F. Olson teach the limitations of claim 1. Referring to claim 6, Fries teaches the front surface comprises a curve shape (Fig. 5: 16).

Claim 7: Fries and H.F. Olson teach the limitations of claim 1. Referring to claim 7, Fries teaches the permitting means comprises slots (Fig. 2: 9).

Claim 8: Fries and H.F. Olson teach the limitations of claim 1. Referring to claim 8, Fries teaches the permitting means comprises holes (Fig. 2: 8).

Claim 14: Fries and D'Antonio et al teach the limitations of claim 1. Referring to claim 14, Fries teaches the absorbing means is wool (Col. 3:66-68).

Claims 15: Fries and H.F. Olson teach the limitations of claim 7. Referring to claim 15, D'Antonio et al teach the slots providing low frequency absorption (e.g. Col. 3:14-17).

7. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fries and H.F. Olson as applied to claim 1 above, in view of McGrath (U.S. Patent 6,015,026).

Claim 19: Fries and H.F. Olson teach the limitations of claim 1. Referring to claim 19, they do not teach a crossover frequency below which sound is absorbed and above which diffusion takes place. McGrath teaches a crossover frequency below which sound is absorbed and above which diffusion takes place (e.g. Figure 24).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus taught by Fries and H.F. Olson to include the teachings of McGrath. The advantage of this would be a cost efficient, easy to install acoustic diffuser that absorbs a wide range of low frequencies, and is reflective over a range of mid-range frequencies.

Allowable Subject Matter

8. Claims 9-12, and 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The following is a statement of reasons for the indication of allowable subject matter: The prior art made of record fails to teach a diffuser with a first set of large holes and a second set of small holes and with slots having a width of 0.1 to 1 mm.

Response to Arguments

9. Applicant's arguments with respect to claims 1-12, 14, 15 and 17-19 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. They are: Ollinger et al (US 3695395), Fujimoto et al (US 5953433), and Fries (US 5362931).

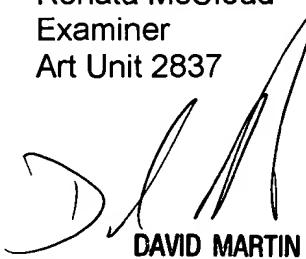
11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Renata McCloud whose telephone number is (571) 272-2069. The examiner can normally be reached on Mon.- Fri. from 8 am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Martin can be reached on (571) 272-2800 ext. 4. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RDM

Renata McCloud
Examiner
Art Unit 2837



DAVID MARTIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800